Amendments to the Specification:

Please replace paragraph **[0039]** with the following amended paragraph:

[0039] **Figure 4D** illustrates, generally at 470, an exploded view of an all terrain vehicle (ATV) transmission shaft extension and the transmission shaft according to one embodiment of the invention. With reference to **Figure 4D**, in one embodiment, transmission shaft 480 can be an Artic Cat 250 or 300 ATV transmission shaft or a Suzuki LT-F4WDX, LT-F4WD (e.g., 250, 300 & King Quad) ATV transmission shaft. Transmission shaft 480 has an end portion 476 and a shoulder 474. In one embodiment, a slot 478 can be ground into the end portion 476 of transmission shaft 480. After the slot 478 has been formed, the transmission shaft extension 400 can be mated with the transmission shaft 480 by moving the transmission shaft extension 400 in the direction indicated by arrows 472.

Please replace paragraph **[0045]** with the following amended paragraph:

[0045] **Figure 6** illustrates another embodiment of a power takeoff for an all terrain vehicle (ATV). With reference to **Figure 6**, an ATV transmission is shown generally at 600. The transmission case has a left portion 602 and a right portion 604. Similar to **Figure 5**, only the pertinent portion of the transmission and/or sub-transmission is shown in **Figure 6** to preserve clarity during the discussion. A transmission shaft 602~~7~~ is adapted for coupling thereto as shown with splines 608. The transmission shaft can extend outside of the transmission case 602 (as indicated by end 606) or the transmission shaft can reside within the confines of the transmission case. The coupling surface 608 will allow power to be diverted from the ATV engine by way of the transmission shaft 602. The

transmission shaft 60~~2~~7 is supported on the right side by a bearing 612 and on the left side by a bearing 610. The transmission shaft 60~~2~~7 has a plurality (all are not shown) of gears mounted thereon such as a gear 620. The gear 620 meshes with a gear 622 to provide transmission functionality. Power is diverted to a power takeoff by coupling to the transmission shaft as previously described. The orientation of the rotating shaft can be redirected as needed for various devices that can be powered by the power takeoff.

Please replace paragraph **[0046]** with the following amended paragraph:

[0046] **Figure 7** shows a system to redirect a rotating shaft direction according to one embodiment of the invention. With reference to **Figure 7**, an ATV transmission is shown generally at 700. The transmission includes a case 702, a transmission shaft 704, with one or more gears indicated by 706 and 708. The transmission shaft is supported by a bearing (not shown) to allow rotation about a longitudinal axis. In the embodiment shown in **Figure 7**, a portion of the transmission shaft 704 extends out of the transmission case 702 as indicated at 710. In the embodiment shown in the figure, power is redirected by means of a sheave system and bevel gears. It will be noted by those of ordinary skill in the art that other systems can be employed to redirect power, such as a flexible shaft, etc. In the embodiment shown, a first circular member 712 is coupled with a second circular member 714 utilizing an appropriate flexible power transfer device 716, enveloped by a housing 730. In one embodiment, circular member 712 and 714 can be sheaves and 716 can be a belt. In another embodiment, 712 and 714 can be sprockets and 716 can be a chain. Secondary shaft 718 is supported by bearings (not shown), and is driven at one end by circular member 714. In one embodiment, the secondary shaft 718 has a bevel gear attached as shown at 722, bevel gear 722 meshes with bevel gear 724 to rotate shaft 726 as shown by arrow 728. Bearings (not shown) support shaft 726 allowing the shaft

to rotate about its axis. Housing 720 contains shaft 726, gears 722, 724, and the associated bearings and other components needed to provide a remote location at which power can be extracted from the engine of the ATV. Such a remote location is another configuration for a power takeoff according to one or more embodiments of the invention. A complete power takeoff unit can be configured to house the necessary power takeoff components and associated auxiliary power systems according to several embodiment of the invention. Such auxiliary systems can facilitate operation, via a power takeoff, of a hydraulic motor, and an electric motor. A power takeoff can be configured to run attachments such as water pumps, grass cutters, winches, etc. The sheaves 712 and 714 can provide increased or decreased rotational speeds of the secondary shaft 718 relative to the transmission shaft 704.

Please replace paragraph **[0054]** with the following amended paragraph:

[0054] An adjustable leg 1051 provides contact with the ground and can include a contact pad 1052. The adjustable leg can be manually operated utilizing a threaded rod or the adjustable leg can be power assisted. One method of providing power assist is to employ a hydraulic line 1050 coupled with a hydraulic cylinder at 1051 to press the contact pad 1052 into contact with the ground 1004, providing stability to the drill mast. The adjustable foot assists during removal of the drill from the hole during retraction by providing vertical rigidity to the system.

Please replace paragraph **[0063]** with the following amended paragraph:

[0063] **Figure 11B** illustrates rotation of a drill mast about an X axis according to one embodiment of the invention. In this example the X axis has

been arbitrarily chosen to be parallel with a longitudinal axis of an ATV. With reference to **Figure 11B**, rotation of the drill mast about the X axis is shown generally at 1150. A drill mast 1011 is shown rotated at angle θ, indicated at 1070, (where the angle θ, indicated at 1070, has been arbitrarily referenced from a perpendicular to an axis 1154) in order to align the drill mast with the vertical Z axis. In one embodiment, rotation about the X axis is accomplished with a mechanism consisting of two concentric cylinders. An inner cylinder 1162 can be fixedly attached to the drill mast 1011. A second cylinder 1160 can be fixedly attached to bracket 1010. A locking mechanism can be employed to fix the rotation of 1162 relative to 1160; thereby, fixing angle 1070. Various locking mechanism can be configured to fix the rotation of 1162 relative to 1160, such as bolt and nut clamp mechanisms. Gears can be provided to facilitate adjustment of the angle at 1070 by allowing precise rotation of the drill mast 1011 about axis 1164.

Please replace paragraph **[0065]** with the following amended paragraph:

[0065] In one or more embodiments, the drill mast can be released from the all terrain vehicle (ATV) while still receiving power from the ATV. Some examples are shown in Figure 14A, Figure 14B, and Figure 14C. When the drill mast is separated from the ATV, the drill mast can be supported by a drill mast stand, such as, but not limited to, a tripod, a frame, etc. The drill can then be used to drill holes as previously described, employing various drilling methods, such as but not limited to rock coring, mud rotary drilling, solid stem auger drilling, hollow stem auger drilling, etc. Separated from the ATV, the drill mast can be maneuvered into places that the ATV could not easily go or go at all, such as a basement of a building. If the space is confined, the drilling can proceed without the exhaust from the ATV being proximate to the operator during the drilling operation.

Please replace paragraph **[0066]** with the following amended paragraph:

[0066] **Figure 12** shows a mast extension according to one embodiment of the invention. With reference to **Figure 12**, a mobile drill is shown generally at 1200. A drill motor 1210 is mounted on a carriage 1214. The carriage 1214 is slidingly disposed on a drill mast. A drill mast extension 1202 is mounted at the top of the drill mast. The drill mast extension has a forward sheave 1204 and a rear sheave 1206. The drill mast extension and the sheaves 1204 and 1206 are used in conjunction with a winch to lift an impact hammer 1322 from point 1324 (**Figure 13**) above the top of the drill bit 1302 (**Figure 13**). With reference back to **Figure 12**, in one embodiment, a winch used to lift the impact hammer includes a motor 1244 and a sheave 1242. In one embodiment, the motor can be a hydraulic motor powered by a power takeoff that obtains power from an ATV engine. A flexible cord, such as a rope or similar member (not shown) is attached to point 1324 (**Figure 13**) and passes up over the first sheave 1204 across the rear sheave 1206 and is received on sheave 1242, wherein several wraps are made around the sheave 1242. The motor 1244 is engaged and the rope is wrapped onto the sheave 1242 raising the impact hammer thereby (1322 **Figure 13**). In one embodiment, a hemp rope having a 0.75 inch outer diameter is used.

Please replace paragraph **[0067]** with the following amended paragraph:

[0067] **Figure 13** illustrates driving an impact hammer according to one embodiment of the invention during standard penetration test (SPT) sampling. With reference to **Figure 13**, when the hole has been drilled to the desired depth

by a drill bit 1302 having flutes 1304, drill bit head 1306, and drill teeth 1308, the carriage 1214 (**Figure 12**) can pivot off to the side; thereby, allowing an impact hammer 1322 to drop down and contact a sample tube extension member 1312, at an end 1314, when the rope is released from sheave 1242 (**Figure 12**). The sample tube extension member is fastened to a sample tube 1310. The blow imparted from the impact hammer to the sample tube extension member 1320 drives the sample tube into the soil beneath the bottom of the hole drilled by the drill bit 1302. In response to the blow imparted from the impact hammer, the sample tube 1310 passed through a hole in the drill bit head 1306, indicated by dashed lines, thus filling the sample tube with a core sample of soil for analysis according to the SPT. The sample tube can be extracted from the hole by retracting the sample tube extension member with the drill motor 1012, carriage 1014 and winch 1020 (**Figure 10**). In a similar fashion, the drill can be retracted from the hole while operating the drill in reverse direction; thereby, facilitating removal of the drill sections. As the drill is withdrawn from the hole, sections of the drill are removed and a length of drill remaining in the hole becomes shorter and shorter until the last piece is removed.

Please add the following three new paragraphs after paragraph **[0024]**:

[0025] **Figure 14A** illustrates a drill separated from an all terrain vehicle, according to one embodiment of the invention.

[0026] **Figure 14B** illustrates a drill separated from and beneath an all terrain vehicle, according to one embodiment of the invention.

[0027] **Figure 14C** illustrates a drill separated from an all terrain vehicle and on a sloped surface, according to one embodiment of the invention.